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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,188	10/19/2001	Brent England Beasley	JSS-0110	9524
27810	7590	04/21/2004	EXAMINER	
EXXONMOBIL RESEARCH AND ENGINEERING COMPANY			NGUYEN, TAM M	
P.O. BOX 900			ART UNIT	PAPER NUMBER
1545 ROUTE 22 EAST			1764	
ANNANDALE, NJ 08801-0900				

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,188

Applicant(s)

BEASLEY ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-20 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/19/01.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "said solution" in line 2. There is insufficient antecedent basis for this limitation in the claim.

The expression "achieve automatically from a remote control point" in claim 10 renders the claim indefinite because it is unclear if the method of recording temperature is achieved, the cooling method is achieved, or the step of feeding the solvent into the sample chamber is achieved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang et al. (EP-0328334).

Tsang discloses a process for monitoring the cloud point of a hydrocarbon liquid by placing the liquid in a chamber and cooling it in the presence of a light beam. When the liquid is transformed from liquefied state into a solidified state, the light from the beam is reflected and the temperature at which the liquid becomes solid is recorded accordingly. It is understood that the cloud point is a temperature at which liquid becomes solid. (See abstract; Fig. 1; col. 1, lines 4-12, 35-37; col. 2, lines 56 through col. 3, line 61; col. 6, lines 1-3)

Tsang does not specifically disclose that the sample is taken at a temperature high enough for it to be free of wax crystal. However, the Tsang test sample is in liquefied state when placing in the testing chamber. It is believed that the sample of Tsang is taken at a temperature high enough for it to be free of wax crystal as claimed. (See col. 5, line 51 through col. 6, line 2)

Claims 1 and 6:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Tsang by using a sample comprising solvent and wax because one of skill in the art would use any sample that contains wax including the claimed sample because any sample containing wax and other substances that have lower freezing points than wax can be employed in the process of Tsang. It would be expected that the results would be the same or similar when using either the claimed sample or other samples in the process of Tsang.

Claim 3:

Tsang does not specifically disclose that the beam comprises visible light radiation. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Tsang by using the claimed laser beam light source because any light source, which causes reflection on the sample when testing, can be used in the Tsang process and it would be expected that the results would be similar or the same when using either the claimed laser beam or any other laser beam in the process Tsang.

Claims 4 and 6:

Tsang does not disclose that the light beam is focused at a point in the sample. However, Tsang discloses that the light beam is focused on the sample (See col. 4, lines 8-12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Tsang by focusing the light beam in the sample as claimed because focusing light beam either in or on the sample would cause light reflection when wax is

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formed and it is within the level of one skill in the art to arrange light detectors in such a way that the detectors would receive reflected lights when wax crystal is formed.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sixt (GB-966,828).

Sixt discloses a process for measuring a pour point of a liquid hydrocarbon by cooling the liquid in the presence of a light beam. The temperature of the pour point of the liquid is recorded when the reflected light is diverted away from a photocell. (See page 1, lines 70 through pages 2, lines 125; page 3, lines 17-52)

Sixt succeeds at disclosing a process for measuring the temperature of a substance at which a transition occurs between any transparent or translucent liquid and a light scattering phase such as the formation of solid.

Sixt does not specifically disclose that the sample is taken at a temperature high enough for it to be free of wax crystal. However, the Sixt test sample is in liquefied state when placing in the testing chamber. It is believed that the sample of Sixt is taken at a temperature high enough for it to be free of wax crystal as claimed.

Sixt does not specifically disclose that wax crystal is formed. However, it is understood that a petroleum fraction always comprises paraffins (wax) and when the petroleum fraction is cooling, wax (paraffins) will become crystal first. Therefore, it would be expected that wax crystal would be formed in the petroleum fraction of Sixt. (See page 1, lines 16-18; page 2, lines 80-84)

Claims 1, 6 and 8:

Sixt does not disclose that wax is in a mixture with solvent.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Sixt by using a sample comprising solvent and wax because one of skill in the art would use any sample that contains wax including the claimed sample because any sample containing wax and other substances that have lower freezing points than wax can be employed in the process of Sixt. It would be expected that, in the process of Sixt, the pour point of a sample would be recorded whether the sample is the claimed sample or not.

Claims 1, 6 and 8:

Sixt does not specifically disclose that the temperature of the wax crystal formation is recorded.

However, it is understood that the pour point is the lowest temperature at which a substance still remains liquid (see page 1, lines 32-34). In the process of Sixt, the petroleum oil becomes solid when the liquid is cooled at a particular temperature. (See page 2, lines 80-84)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Sixt by recording the temperature at which the liquid becomes solid because the solidified temperature would provide the cloud point of the liquid which is useful when processing the liquid in other chemical refineries.

Claims 2, 6 and 8:

The light beam is conducted under conditions that provide relative movement between the sample and the beam. (See page 1, lines 75-86; page 2, lines 1-8)

Claims 3, 7 and 9:

Sixt does not disclose that the light is visible.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Sixt by using a visible light radiation was claimed because Sixt discloses that any source of radiation or wave emanations capable of being reflected from the surface of the sample can be used in the process (see page 2, lines 67-70). Therefore, one of skill in the art would use any light source including a visible light radiation.

Claims 4, 6 and 8

Sixt does not disclose that the light beam is focused at a point in the sample. However, Sixt discloses that the light beam is focused on the sample (See Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Sixt by focusing the light beam in the sample as claimed because it would be expected that the results would be the same or similar when focusing the light beam in or on the sample because in either case one of skill in the art would easily arrange a light source and a light reflect detector in such a way that light is reflected when crystallization occurring.

Claims 5, 6 and 8:

When the solidification of the liquid occurs, the light is reflected and detected. (See page 2, lines 80-90)

Claim 8:

Sixt does not disclose that the solvent containing wax is from a hot recovered dewaxing solvent. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Sixt by using a solvent containing wax from a hot recovered dewaxing solvent because where the sample comes from would not affect the outcomes of the process because any sample containing wax and other substances that have

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lower freezing points than wax can be employed in the process of Sixt. It would be expected that, in the process of Sixt, the cloud point of a sample would be recorded whether the sample is the claimed sample from a hot recovered dewaxing solvent or not.

Claim 8:

Sixt does not specifically disclose that a slipstream of the solvent from a solvent line is passed through a solvent loop containing a sample chamber and into the chamber without exposing the solvent to ambient, wherein the loop is attached and adjacent to the solvent line. However, Sixt discloses that a stream of a sample is introduced into sample chamber-12 via line-22 and chamber-12 appears to be enclosed by container-10. Therefore, it would be expected that the sample does not expose to ambient and container-10 (solvent loop) is adjacent to the solvent line as claimed. (See Fig. 1 and 2, see page 2, lines 22-95)

Claim 10:

The sample is introduced into container 32 is automatic control by a remote control point (e.g., point 49). See Fig. 1 and 2; pages 3, lines 17-52

Claim 11:

The sample is cooled until it becomes solid. (See page 2, lines 79-81)

Allowable Subject Matter

Claims 12-20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason allowance is that the prior art of record does not disclose or suggest a dewaxing process wherein a slipstream of hot solvent, which is separated from a dewaxed oil and

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wax, is passed into a testing zone for determination wax crystallization by employing a laser beam as called for in claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764



TN
4/14/04